Attachment B
Intersection Level of Service Criteria

LOS	Signalized intersectins (V/C Ratio)	Unsignalized intersections (Sec. of delay)	Definition
A	< 0.60	< 10	Conditions of free unobstructed flow, no delays, and all signal phases sufficient in duration to clear all approaching vehicles.
B	0.61 – 0.70	> 10 and < 15	Conditions of stable flow, very little delay, and a few phases are unable to handle all approaching vehicles.
C	0.71- 0.80	> 15 and < 25	Conditions of stable flow, delays are low to moderate, and full use of peak direction signal phases is experienced.
D	0.81 – 0.90	> 25 and < 35	Conditions approaching unstable flow, delays are moderate to heavy, and significant signal time deficiencies are experienced for short durations during the peak traffic period.
E	0.91 – 1.00	> 35 and < 50	Conditions of unstable flow, delays are significant, signal phase timing is generally insufficient, and congestion exists for extended duration throughout the peak period.
F	> 1.00	> 50	Conditions of forced flow, travel speeds are low and volumes are well above capacity. This condition is often caused when vehicles released by an upstream signal are unable to proceed because of back-ups from a downstream signal
Source: Highway Capacity Manual, 2000 Edition			

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Attachment C
Cumulative Projects

The following projects are currently under construction or are proposed for construction along Highway 192 in 2009 (Caltrans 2009). These projects are shown on Figure A-7 in Attachment A.

HWY. 192 (STANWOOD DR.) – TEA FIRE EMERGENCY PROJECT

- IN MONTECITO FROM EL CIELITO ROAD TO COYOTE ROAD (PM 4.8 – 6.2)
- Project: Emergency erosion control, retaining wall and embankment repair.
- Traffic Controls: One-way reversing traffic control Mondays Through Saturdays 7 am to 5 pm
- Resident Engineer: David Ballentine
- Contractor: Souza Construction Inc., San Luis Obispo
- Est. Construction Cost: $1.5 million
- Start Date: December 12, 2008
- Estimated Completion: May 2009
- EA: 0R9604

HWY. 192 – MISSION CANYON SAFETY

- IN SANTA BARBARA COUNTY FROM ALAMAR AVENUE TO MISSION CANYON ROAD (PM 2.4 – 3.1)
- Project: Safety project to replace roadside ditches with underground pipe drainage system.
- Project Status: Bids opened November 14, 2008 and project was awarded.
- Resident Engineer: Michael Mortensen
- Contractor: R. Burke Corp. of San Luis Obispo
- Est. Construction Cost: $1.7 Million
- Estimated Start Date: April 2009
- Estimated Completion: Fall 2009
- EA: 0F5704

A third project to be considered in the cumulative analysis is the Santa Barbara Botanic Garden Vital Mission Plan. The proposal is to improve facilities by adding new buildings, upgrading existing buildings, and providing ADA access to all facilities.

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Attachment D
Biological Resources Survey Report

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Mission Creek

Fish Passage Improvement and Pipeline Repair Project

Biological Resources Survey Report

February 2009

Prepared for

Cachuma Operation and Maintenance Board
3301 Laurel Canyon Road
Santa Barbara, CA 93105-2017

Conducted by

Science Applications International Corporation
5464 Carpinteria Avenue, Suite K
Carpinteria, CA 93013

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INTRODUCTION

The proposed project is located at the State Route 192 Bridge over Mission Creek in the foothills of the Santa Ynez Mountains at the northern edge of the City of Santa Barbara. The bridge is on Foothill Road (State Route 192) just east of Mission Canyon Road (Figure 1). Flowing water is present in the creek all year due to releases from Gibraltar Reservoir to maintain flow in the dry season. A concrete apron on the downstream side of the bridge has resulted in scour of the creek bed and banks and is a barrier to fish (steelhead) passage under some flows. The South Coast Conduit (SCC), which provides the primary water supply to communities east of the project location, is buried under the edge of the concrete apron. This report covers biological surveys for a combined project with two goals: to remove the fish passage barrier and to replace a section of the SCC. Integrity of the SCC is threatened due to existing scour of the creek bed, and the proposed fish passage improvements would increase that scour. To avoid damage to the pipeline, it would be buried deeper when the existing concrete apron on the downstream side of the bridge is removed as part of the fish passage project.

The creek provides potential habitat for the California red-legged frog (*Rana aurora draytonii*), a federally listed as threatened species. Because California red-legged frogs could be present at the project site, protocol surveys were conducted to determine the presence or absence of this species. The creek also provides suitable habitat for steelhead (*Oncorhynchus mykiss*), a federally listed as endangered species. A wetland delineation was also conducted to determine the boundaries of wetland resources.

METHODS

Surveys for common and sensitive biological resources are described below. Table 1 provides survey personnel and timing.

BOTANICAL SURVEYS

SAIC conducted a search of the California Natural Diversity Database (CNDDB) (Californa Department of Fish and Game [CDFG] 2008a) for special-status plant species reported within approximately five miles of the project site. The list of plant species developed from this search was reduced to include only species that occur in habitat similar to that at the project site. Surveys for these species were conducted with other surveys for California red-legged frogs, wetlands, and other waters of the U.S. (see below).

In addition to surveys for sensitive plant species, all trees (native and non-native) in the work area and vicinity were either flagged and surveyed or subsequently mapped on project plans. Trees upstream and substantially downstream of the project were mapped because the precise project work area boundaries were not determined at the time of the field visit.

Figure 1. Mission Creek Project Location Map

Table 1. Survey Information

Date	*Time*	*Conditions*	*Personnel*	*Notes*
15 August 2008	8:00 AM	Clear sky, humid, air about 67 °F, full moon	Ted Mullen, Rosie Thompson, Charis van der Heide	California red-legged frog (CRLF) day survey 100 yards down and upstream of the bridge
25 August 2008	8:15 PM	Clear sky, calm, air about 72 °F, 1/4 moon	Rosie Thompson, Charis van der Heide	CRLF night survey 100 yards down and upstream of the bridge
3 September 2008	8:30 PM	Calm and clear with fog overnight, air about 66 °F, 1/8 moon	Ted Mullen, Rosie Thompson	CRLF night survey 100 yards down and upstream of the bridge
11 September 2008	8:00 PM	Calm and clear with overnight fog, air 64 °F, 3/4 moon	Rosie Thompson, Charis van der Heide	CRLF night survey 100 yards down and upstream of the bridge
14 October 2008	2:30 PM	Clear sky, calm, air 82-77 °F, full moon	Rosie Thompson, Tamara Klug	CRLF day survey 100 yards down and upstream of the bridge and wetland delineation
15 October 2008	4:00 PM	Clear sky, calm	Tamara Klug	Investigation of the potential staging area
22 October 2008	7:00 PM	Clear sky, calm, air about 72 °F, half moon	Rosie Thompson, Charis van der Heide	CRLF night survey 100 yards down and upstream of the bridge
3 December 2008	3:00 PM	Clear sky, calm, air 68 °F	Rosie Thompson, Tamara Klug	Survey to identify botanical and wetland resources upstream of the bridge crossing

An area southwest of the parking lot for the adjacent (east side of the creek) tennis club was investigated for rare plants and other sensitive botanical resources, because it could be used as a staging area. It is about 100 feet in diameter and has what appears to be horse fencing on the side next to the parking lot.

WILDLIFE SURVEYS

SAIC conducted a search of the CNDDB for all special status species records within three miles of the Mission Creek project site (CDFG 2008b). A literature search was also performed for

information on special status species that could be present, such as critical habitat for federally listed species.

During protocol surveys for the California red-legged frog, habitat along Mission Creek was assessed for suitability for the sensitive species mentioned above with records in the vicinity.

The current (August 2005) USFWS protocol for California red-legged frog surveys was used. No individuals of this species had been previously reported for Mission Creek or any of the streams near the project site, based on the CNDDB search (CDFG 2008b). The survey protocol involved two daytime surveys and four nighttime surveys. These were conducted by SAIC biologists with a federal 10(a)(1)(A) permit for this species. The permitted biologists, Ted Mullen and Rosie Thompson, assisted in all of the surveys.

The daytime surveys consisted of slowly approaching the water and slowly walking along the creek approximately 300 feet down and upstream of the bridge while scanning the water surface and banks with binoculars (Cannon 8x25; Nikon 8x40) for red-legged frogs. The nighttime surveys followed a similar format, but flashlights (Maglite 3D cell; Nite Light Wizard Series 6V light) were used instead of binoculars to look for eyeshine. Binoculars were also carried if necessary for identification of any frogs found by eyeshine. The daytime and nighttime surveys were conducted on separate dates. All of the surveys were conducted at least seven days apart over a six-week time period. Table 1 shows the personnel and conditions for each of the surveys.

WETLAND DELINEATION

Aerial photography of the project location was reviewed using Google Earth. In addition, wetland classifications for Mission Creek at the project site by the National Wetlands Inventory (NWI 2008) and by California State University Northridge (CSUN) (Southern California Coastal Water Research Project [SCCWRP] 2007) were reviewed. These previous classifications were based on aerial photograph interpretation and were revised based on field conditions during the SAIC site visit. A review of soil survey data from Santa Barbara was also conducted.

Wetland delineations using the U.S. Army Corps of Engineers (USACE) Manual (Environmental Laboratory 1987) and the Arid West Supplement (USACE 2008) were performed at all locations containing potential wetlands. This approach requires sites to meet a set of criteria for each of three parameters (wetland soils, hydrology, and vegetation) to be considered a wetland. Waters of the U.S. were determined with consideration of recent guidance from the United States Environmental Protection Agency (EPA) and the USACE districts on implementing the Supreme Court's decision in the consolidated cases Rapanos v. United States and Carabell v. United States.

RESULTS

CREEK CHARACTERISTICS

The substrate of the creek bed is composed of cobbles and gravel with scattered boulders. The banks are steep, densely vegetated, and lined with trees that create a complete canopy over the canyon. The understory vegetation is scattered but dense in places, and emergent aquatic vegetation is isolated and sparse. A large scour pool is present on the downstream side of the bridge, primarily due to the concrete apron adjacent to the bridge. The banks of this pool are eroding due to water flow off the concrete apron. The pool is 2 to 3 feet deep with an undercut eroded beneath the concrete apron. A number of smaller natural pools are present upstream and downstream of the bridge.

BOTANICAL SURVEYS

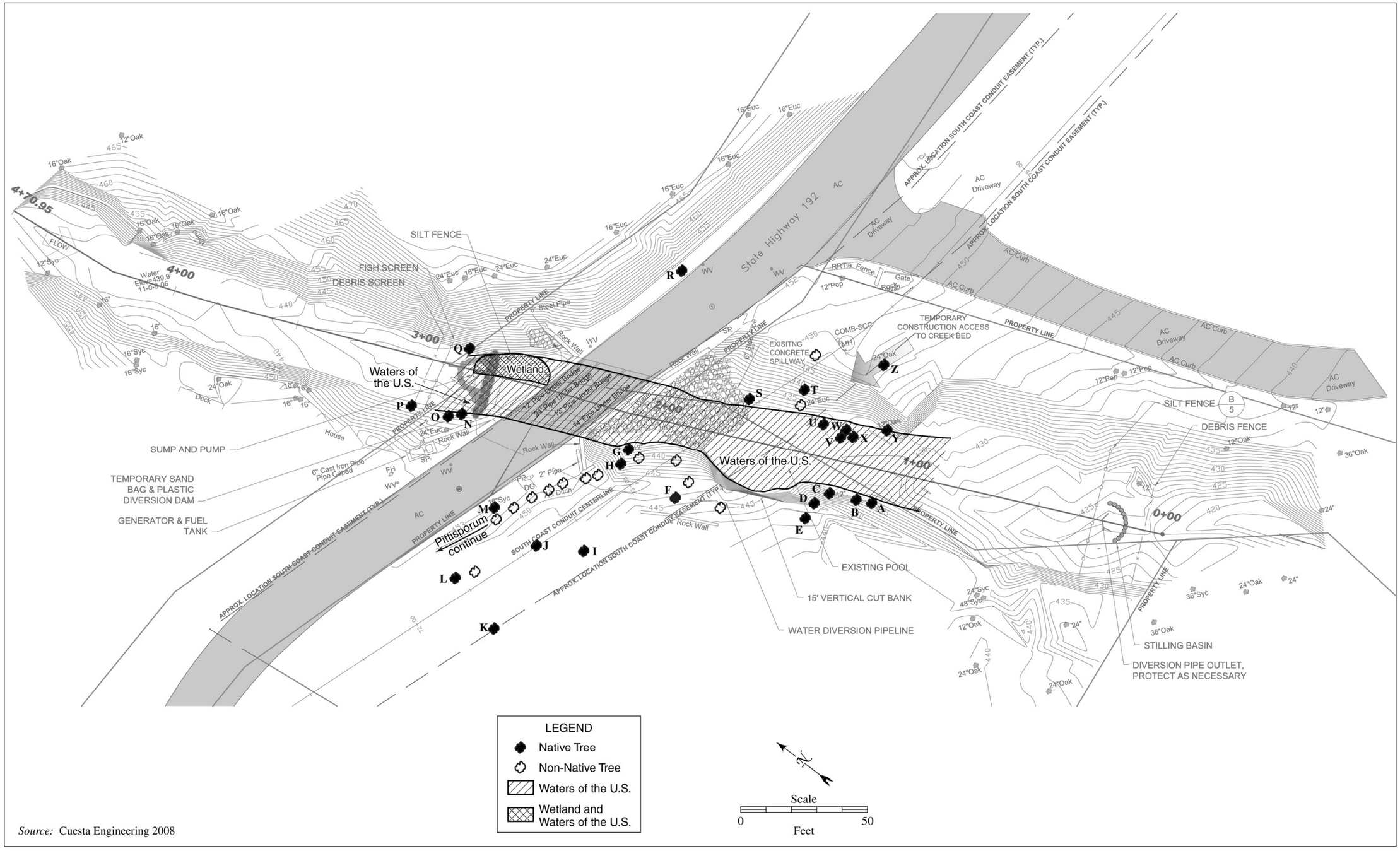
Special status plant species identified in the CNDDB search that are known from the project vicinity and occur in habitat similar to the proposed project site include the Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*), mesa horkelia (*Horkelia cuneata* ssp. *puberula*), and Santa Barbara honeysuckle (*Lonicera subspicata* var. *subspicata*). No rare, threatened, endangered, or sensitive plant species were observed during surveys, nor are they expected to be present. Habitat is marginal for any of the species identified above, and individuals of these species should have been detectable at the time of the field surveys.

Vegetation in the uplands in the vicinity of the work area is mostly non-native, consisting of landscape plants at adjacent developed sites or that have escaped from cultivated areas. Notable non-native species include Japanese pittosporum (*Pittosporum tobira*) and acacia (*Acacia* sp.). Native trees adjacent to the creek in the work area consisted of coast live oak (*Quercus agrifolia*), western sycamore (*Platanus racemosa*), white alder (*Alnus rhombifolia*), arroyo willow *(Salix lasiolepis*), and sandbar willow (*Salix exigua*). Most of the native riparian trees (excludes oaks) in close proximity to the work site are relatively small, less than 6 inches in stem diameter, with the exception of one 8-inch western sycamore at the southwest side of the bridge (tree G in Figure 2). Non-native trees consist of Japanese pittosporum, eucalyptus, and acacia. Tree locations and sizes are listed in Table 2 and shown on Figure 2. Scattered shrubs, vines, and herbaceous plants, both native and non-native, were present along the banks. Native species included mulefat (*Baccharis salicifolia*), California blackberry (*Rubus ursinus*), poison oak (*Toxicodendron diversifolium*), rush (*Juncus* sp.), umbrella sedge (*Cyperus eragrostis*), horsetail (*Equisetum* sp.), and leather root (*Hoita macrostachya*). Non-native species included rabbitsfoot grass (*Polypogon monspeliensis*), English ivy (*Hedera helix*), and mint (*Mentha* sp.).

Vegetation at the staging area consists of annual and perennial grasses and herbs that are characteristic of disturbed habitats including horseweed (*Conyza canadensis*), Bermuda grass (*Cynodon dactylon*), and spurge (*Euphorbia* sp.). All of these species are widely distributed in the area and would be expected to rapidly re-colonize this site following construction. Numerous native and non-native trees surround the proposed staging area. The most abundant non-native species include eucalyptus (*Eucalyptus* sp.) and myoporum (*Myoporum laetum*). Native trees consist of coast live oak and western sycamore. No wetlands are present.

Table 2. Native Trees Present in and Adjacent to the Work Area

Tree Number	*Species*	*Stem diameter(s) (inches)*
A	Coast live oak	9
B	Willow	3
C	Coast live oak	9
D	Coast live oak	9
E	Coast live oak	10
F	Coast live oak	6
G	Western sycamore	8
H	Coast live oak	5
I	Coast live oak	3
J	Coast live oak	5
K	Coast live oak	8, 3, 3, 2
L	Coast live oak	1, 1, 1
M	Western sycamore	16
N	White alder	1
O	Western sycamore	1
P	White alder	2
Q	White alder	0.5
R	Western sycamore	1, 1
S	Willow	4
T	Coast live oak	7, 7, 7
U	Willow	2
V	Willow	6
W	Willow	4
X	Willow	7
Y	Coast live oak	12
Z	Coast live oak	11, 12, 12, 15



Source: Cuesta Engineering 2008

Figure 2. Mapped Biological Resources at Mission Creek Crossing

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WILDLIFE SURVEYS

Special status species that are recorded or have the potential to occur within the project area and for which suitable habitat is present along Mission Creek include California red-legged frog (federally-listed as threatened [FT] and a California Species of Special Concern [SSC]), southwestern pond turtle (*Actinemys marmorata pallida*) (SSC), two-striped garter snake (*Thamnophis hammondii*) (SSC), and Cooper's hawk (*Accipiter cooperii*) (CDFG Watch List [WL] while nesting). A literature search found that no designated or proposed critical habitat for the California red-legged frog is present in Mission Creek (U.S. Fish and Wildlife Service [USFWS] 2006, 2008), but designated critical habitat for steelhead is present (National Marine Fisheries Service [NMFS] 2005). Habitat quality for steelhead is classified as moderate to high, and several barriers of varying severity are present downstream and upstream of the project site (Stoecker and Conception Coast Project 2002).

Other sensitive species were recorded within three miles of the project area, but are not expected to occur in the project area due to lack of suitable habitat. These species are associated with beaches and coastal salt marsh habitats and include bank swallow (*Riparia riparia*) (California state-listed as threatened [ST] while nesting), California least tern (*Sternula antillarum browni*) (federally-listed as endangered [FE] and California state-listed as endangered [SE] while nesting), western snowy plover (*Charadrius alexandrinus nivosus*) (FT and SSC while nesting), and globose dune beetle (*Coelus globosus*). White-tailed kites (*Elanus leucurus*) (CDFG Fully Protected [FP] while nesting) occur in the coastal Santa Barbara region. However, white-tailed kites prefer foraging in open grasslands which are absent from the project area, and therefore, this species is not expected to occur in the project area.

No California red-legged frogs were heard or observed on any of the protocol surveys. Pacific chorus frogs (*Pseudacris regila*) were seen or heard on several of the surveys. During the first survey, juveniles of this species with legs and long tails were found downstream of the bridge.

Steelhead or rainbow trout (*Oncorhynchus mykiss*) were observed in the creek during most of the surveys. Individuals included small young-of-the-year and larger one to two year old fish. These fish were observed in the larger pools below boulders and in the smaller riffles between pools. A goldfish (*Carassius auratus*) was observed on multiple surveys in the large pool just below the bridge.

Aquatic invertebrates were commonly observed on and under the cobbles, including giant water bug (*Abedus indentatus*), water boatman (*Trichocorixa reticulate*), water strider (*Gerris remigis*), and water scavenger beetle (*Tropisternus ellipticus*).

Several avian species were observed along the riparian corridor of Mission Creek during the day and night surveys, including western tanager (*Piranga ludoviciana*), oak titmouse (*Baeolophus ridgwayi*), California towhee (*Pipilo crissalis*), spotted towhee (*Pipilo maculates*), lesser goldfinch (*Carduelis psaltria*), black phoebe (*Sayornis nigricans*), mourning dove (*Zenaida macroura*), acorn woodpecker (*Melanerpes formicivorus*), and great horned owl (*Bubo virginianus*).

Yellow warblers (*Dendroica petechia brewsteri*) prefer dense, mature willow scrub and riparian forests for nesting and would have a low potential to nest in the trees adjacent to the Highway

192 Bridge. The yellow warbler is classified by the CDFG as SSC while nesting. The yellow warbler may occur in the area as a transient and summer resident (Lehman 1994). Cooper's hawk is likely to forage in the project vicinity and could utilize the trees along the riparian corridor adjacent to the Mission Creek Bridge for nesting, although no evidence of any raptor nests were observed during the field surveys.

Big brown bats (*Eptesicus fuscus*) and California myotis (*Myotis californicus*) (Collins 2008) were observed roosting under the bridge in the narrow space between a large pipeline and a vertical concrete bridge support. A large pile of guano was found on the cement abutment beneath the location, indicating long-term use of the site. Raccoon (*Procyon lotor*) and domesticated black and white rat (*Rattus norvegicus*) were also observed along the banks of the creek during the night surveys.

WETLAND DELINEATION

The Mission Creek watershed comprises Old Mission Creek, Rattlesnake Creek, and Las Canoas Creek and covers approximately 7,786 acres (12.2 square miles) (URS Greiner Woodward-Clyde 1999). This watershed originates in the Santa Ynez Mountains at about 4,000 feet and extends down slope through native habitat in the Los Padres National Forest (approximately 48 percent of the watershed), which gives way to low-density residential (approximately 18 percent of the watershed) and then to high-density residential and commercial land uses (approximately 17 percent of the watershed). The remaining area is made up of other minor uses including agriculture (URS Greiner Woodward-Clyde 1999). The creek in developed portions of the City of Santa Barbara drains to a lagoon that subsequently flows into the Pacific Ocean. This drainage has significant nexus to be considered a waters of the U.S., based on the following characteristics:

- It is tributary to a Traditional Navigable Water (TNW): the Pacific Ocean.
- It is a Relatively Permanent Water (RPW). While flow is artificially maintained, given its size and location, water would be expected to flow at least seasonally (continuously for a minimum of three months).
- It is capable of supporting endangered species: the California red-legged frog and steelhead.
- The drainage carries urban pollutants to a TNW.

Any one of these characteristics would provide significant nexus.

Downstream of the Highway 192 Bridge, Mission Creek is deeply incised and composed mostly of cobbles and boulders with occasional chunks of concrete and other debris. Waters of the U.S. were mapped based on evidence of flow (e.g., drift lines, water marks, shelving, and a change in vegetation) and are about 30 feet wide on average (see Figure 2 for limits of waters of the U.S. within the project area). No wetlands were present downstream of the bridge; the substrate is too rocky and flows are too turbulent to support wetland vegetation.

The creek at this location is classified as R4SBA (riverine, intermittent, streambed, temporarily flooded) with the adjacent riparian canopy as PFOA (palustrine, forested, temporarily flooded) on the CSUN map (SCCWRP 2007) and R4SBA and PFOA on the NWI map (NWI 2008). Based on field observations and using the classification system developed by Cowardin, the aquatic system (stream channel) at this location would be classified as R3UB1K (riverine, upper perennial, unconsolidated bottom, cobble-gravel, artificially flooded) with the adjacent riparian woodland PFO1A (palustrine, forested, broad-leaved deciduous, temporarily flooded).

Upstream of the bridge, the water flow is slower and a small wetland has developed on the east side of the creek (see Figure 2 for location). Hydrophytic vegetation at this location consists of willow-herb (*Epilobium ciliatum*), mugwort (*Artemisia douglasiana*), and arroyo willow, among other species and easily meets the hydrophytic vegetation criterion. Evidence of inundation was present, based on water stained rocks and water present despite lack of significant rainfall for months. Soils could not be tested due to the rocky substrate and minimal soil development. The creek is classified as R4SBA on the CSUN maps (SCCWRP 2007) and the NWI maps (NWI 2008). The aquatic system (stream channel) observed is R3UB1K with the adjacent riparian woodland PFO1A.

SUMMARY

No sensitive plant species are known or expected at the project location or the potential staging area. Several native riparian trees are present in the project vicinity. A small wetland is located in the area that could be disturbed by diversion of the flow during construction, and waters of the U.S. run through the project area.

Although water is present for much to all of the year in the creek and suitable habitat is present along Mission Creek in the project area, no California red-legged frogs were found during protocol surveys. Based on these observations, no red-legged frogs are anticipated to be present at the construction site for the fish passage improvement and pipeline repair project. Federally-listed steelhead or rainbow trout are present in the creek and individuals within the work area will need to be relocated during project construction.

Other sensitive species have the potential to occur in the project vicinity based on local records and presence of suitable habitat. These species include Cooper's hawk, yellow warbler, southwestern pond turtle, and two-striped garter snake.

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Attachment A: California Red-legged Frog Survey Forms

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Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ _____ _____
(FWS Field Office) (date) (biologist)

Date of Survey: Aug 15 2009 (mm/dd/yyyy) **Survey Biologist:** Thompson (Last name) Rosie (first name)

Survey Biologist: Mullen (Last name) Ted (first name)

Site Location: Mission Creek @ Hwy 192 in Santa Barbara Co. 34.446541° 119.708552°
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: South Coast Conduit Repair & Fish Passage
Brief description of proposed action:
Replace scc at creek xing. Remove concrete on downstream side of bridge & replace w/ step pools for fish passage.

Type of Survey (circle one) (DAY) NIGHT BREEDING (NON-BREEDING)

Survey number (circle one): (1) 2 3 4 5 6 7 8

Begin Time: 8:15 am **End Time:** 9:50 am

Cloud cover: 0 **Precipitation:** 0

Air Temperature: 67°F **Water Temperature:** _____

Wind Speed: 0 **Visibility Conditions:** Water clear

Moon phase: _____ **Humidity:** _____

Description of weather conditions: clear, warm, humid

Brand name and model of light used to conduct surveys: NA

Were binoculars used for the surveys (circle one)? (YES) NO
Brand, model, and power of binoculars: 8x25 Canon

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pseudacris regilla	several	O	young		positive

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: trout in pools to ~8" TL

Other notes, observations, comments, *etc.*

Creek is primarily pools & flow-through boulder. Good cover on banks & shade from riparian trees. Landowner who has lived there 40yrs saw a RLF ~~there~~ in late 1960's. Have also seen pond turtles.
No RLF observed on 15 Aug 2008.

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix D.
California Red-legged Frog Habitat Site Assessment Data Sheet

Site Assessment reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Site Assessment: 8/15/2008 (mm/dd/yyyy)

Site Assessment Biologists: Thompson, Rosie (Last name, first name); Mullen, Ted (Last name, first name)

Vander Heide, Charis (Last name, first name); _____ (Last name, first name)

Site Location: Santa Barbara Co, Mission Creek at Hwy 192, 34.446541° 119.708552°
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: South Coast Conduit Repair & Fish Passage
Brief description of proposed action:
Replace SCC at creek xing on downstream side of Hwy 192 bridge. Remove concrete downstream side of bridge & replace with step pools for trout passage.

1) Is this site within the current or historic range of the CRF (circle one)? (YES) NO

2) Are there known records of CRF within 1.6 km (1 mi) of the site (circle one)? YES (NO)
If yes, attach a list of all known CRF records with a map showing all locations.

GENERAL AQUATIC HABITAT CHARACTERIZATION
(if multiple ponds or streams are within the proposed action area, fill out one data sheet for each)

POND:

Size: _____ Maximum depth: _____

Vegetation: emergent, overhanging, dominant species: _____

_____

_____

Substrate: _____

_____

Perennial or Ephemeral *(circle one)*. If ephemeral, date it goes dry: _____

Appendix D.

California Red-legged Frog Habitat Site Assessment Data Sheet

STREAM:

Bank full width: _____

Depth at bank full: _____

Stream gradient: _____

Are there pools (circle one)? (YES) NO

If yes,

Size of stream pools: varies from a few feet to ~25' diameter

Maximum depth of stream pools: 3'

Characterize non-pool habitat: run, riffle, glide, other: step pools primarily. Water flows through rocks (boulders) with no riffles or runs.

Vegetation: emergent, overhanging, dominant species: Riparian trees = sycamore, alder (few), arroyo willow, oak (coast live). Small patches of rushes and sedges along banks.

Substrate: boulders, cobbles, gravel, sand

Bank description: Steep banks generally ~10' high. Vegetation varies from none to native species but mostly landscape species from adjacent residential area

(Perennial) or **Ephemeral** *(circle one)*. If ephemeral, date it goes dry: _____ at least now with water release into creek for trout.

Other aquatic habitat characteristics, species observations, drawings, or comments:
Trout are present in pools. Some Pacific chorus frogs also present.

Rattlesnake Cr. (upstream of work site) has scour pool on downstream side of exposed pipeline. Pool isolated (no flow connecting it to Morrison Cr. on 15 Aug 08 and many trout in pool (~15' dia.). Large pool at downstream edge of concrete where work will occur.

Necessary Attachments:

1. All field notes and other supporting documents
2. Site photographs
3. Maps with important habitat features and species location

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 8-25-08 (mm/dd/yyyy)

Survey Biologist: Thompson (Last name) Rosie (first name)

Survey Biologist: van der Heide (Last name) Charis (first name)

Site Location: Mission Cr. @ Hwy 192 in Santa Barbara Co. 34.446541° 119.708552°
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: South Coast Conduit Repairs & Fish Passage
Brief description of proposed action:

Type of Survey (circle one): **DAY** (NIGHT) **BREEDING** (NON-BREEDING)

Survey number (circle one): 1 (2) 3 4 5 6 7 8

Begin Time: 8:15 PM **End Time:** 10:00 PM

Cloud cover: None **Precipitation:** 0

Air Temperature: 72°f **Water Temperature:** _____

Wind Speed: 0 **Visibility Conditions:** water & air clear

Moon phase: last quarter on 23 Aug **Humidity:** _____

Description of weather conditions: Calm & clear w/ fog at night to early AM

Brand name and model of light used to conduct surveys: Maglite 3D 3D cell

Were binoculars used for the surveys (circle one)? (YES) NO
Brand, model, and power of binoculars: Canon 8X25

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Pseudacris regilla	>20	O	larvae		certain

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: trout present

Other notes, observations, comments, *etc.*

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 9/03/2008 (mm/dd/yyyy)

Survey Biologist: Thompson (Last name) Rosie (first name)

Survey Biologist: Mullen (Last name) Ted (first name)

Site Location: Mission Creek @ Hwy 192
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: South Coast Conduit Repairs & Fish Passage
Brief description of proposed action:

Type of Survey (circle one): **DAY** (NIGHT) **BREEDING** (NON-BREEDING)

Survey number (circle one): 1 2 (3) 4 5 6 7 8

Begin Time: 8:30 p **End Time:** 10:15 p

Cloud cover: None **Precipitation:** None

Air Temperature: 66°F **Water Temperature:** _____

Wind Speed: None **Visibility Conditions:** air & water clear

Moon phase: between new & 1st quarter **Humidity:** _____

Description of weather conditions: Calm & clear w/ fog overnight

Brand name and model of light used to conduct surveys: Maglite 3D,

Were binoculars used for the surveys (circle one)? (YES) NO
Brand, model, and power of binoculars: Cannon 8X25

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
none					

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: _____

Other notes, observations, comments, *etc.*

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ (FWS Field Office) _____ (date) _____ (biologist)

Date of Survey: 09/11/2008 (mm/dd/yyyy) **Survey Biologist:** Thompson, Rosie (Last name) (first name)
Survey Biologist: VanderHeide Charis (Last name) (first name)

Site Location: Mission Cr @ Hwy 192
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: South Coast Conduit Repairs & Fish Passage
Brief description of proposed action:

Type of Survey (circle one): **DAY** (**NIGHT**) **BREEDING** (**NON-BREEDING**)

Survey number (circle one): 1 2 3 (4) 5 6 7 8

Begin Time: 8:05 p **End Time:** 9:35 p

Cloud cover: None **Precipitation:** ϕ

Air Temperature: 64°F **Water Temperature:** _____

Wind Speed: ϕ + light breeze **Visibility Conditions:** air & water clear

Moon phase: 3/4 **Humidity:** _____

Description of weather conditions: overnight fog w/ clear days

Brand name and model of light used to conduct surveys: 3-D Maglite

Were binoculars used for the surveys (circle one)? **YES** (**NO**)
Brand, model, and power of binoculars: Cannon 8x25

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
none					

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: _____

Other notes, observations, comments, *etc.*

Water level up again. Fewer fish observed.
No fish observed in Rattlesnake Cr. pool.
2 spp. caddisfly larvae - one w/ sand tube (common) & one w/ leaf tube
2 spp bats observed under bridge

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ _____ _____
(FWS Field Office) (date) (biologist)

Date of Survey: 10/14/2006 (mm/dd/yyyy) **Survey Biologist:** Thompson, Rosie (Last name) (first name)

Survey Biologist: _____ (Last name) (first name)

Site Location: Mission Gr. @ Hwy 1T2
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: South Coast Conduit Repairs & Fish Passage
Brief description of proposed action:

Type of Survey (circle one): (DAY) NIGHT (BREEDING) NON-BREEDING

Survey number (circle one): 1 2 3 4 (5) 6 7 8

Begin Time: 2:30 p-3:00 & 4:30-5:10 **End Time:** 5PM

Cloud cover: clear **Precipitation:** ∅

Air Temperature: 82F→77F **Water Temperature:** _____

Wind Speed: very light breeze **Visibility Conditions:** water & air clear

Moon phase: NA **Humidity:** _____

Description of weather conditions: warm on sunny, cool nights

Brand name and model of light used to conduct surveys: NA

Were binoculars used for the surveys (circle one)? (YES) NO
Brand, model, and power of binoculars: Canon 8X25

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
Hyla regilla	1	O	juv		+

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: Trout

Other notes, observations, comments, *etc.*

many leaves on water surface in pools
trout in pool below bridge & in upstream pools. none observed in Rattlesnake Creek pool.

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Appendix E.
California Red-legged Frog Survey Data Sheet

Survey results reviewed by _____ _____ _____
(FWS Field Office) (date) (biologist)

Date of Survey: 10/23/08 (mm/dd/yyyy)

Survey Biologist: Thompson, Rosie (Last name) (first name)

Survey Biologist: vanderHeide, Charis (Last name) (first name)

Site Location: Mission Cr. @ Hwy 192
(County, General location name, UTM Coordinates or Lat./Long. or T-R-S).

****ATTACH A MAP** (include habitat types, important features, and species locations)**

Proposed project name: South Coast Conduit Repair & Fish Passage
Brief description of proposed action:

Type of Survey (circle one): **DAY** (**NIGHT**) (**BREEDING**) **NON-BREEDING**

Survey number (circle one): **1** **2** **3** **4** **5** (**6**) **7** **8**

Begin Time: 7:35 p **End Time:** 8:50 p.

Cloud cover: Clear **Precipitation:** ϕ

Air Temperature: 72°F **Water Temperature:** _____

Wind Speed: Calm **Visibility Conditions:** water clear

Moon phase: last quarter - not visible **Humidity:** _____

Description of weather conditions: very warm day, cool @ night (~50°F)

Brand name and model of light used to conduct surveys: 3D mag Lite

Were binoculars used for the surveys (circle one)? (**YES**) **NO**
Brand, model, and power of binoculars: 8x25 Canon

Appendix E.
California Red-legged Frog Survey Data Sheet

AMPHIBIAN OBSERVATIONS

Species	# of indiv.	Observed (O) Heard (H)	Life Stages	Size Class	Certainty of Identification
none					

Describe potential threats to California red-legged frogs observed, including non-native and native predators such as fish, bullfrogs, and raccoons: _____

Other notes, observations, comments, *etc.*

many trout in pool below bridge w/ few downstream of there. more upstream, especially near Rattlesnake Cr. confluence. none in Rattlesnake pool.

Necessary Attachments:

4. All field notes and other supporting documents
5. Site photographs
6. Maps with important habitat features and species locations

Attachment E
Mitigation, Monitoring, and Reporting Plan

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Mission Creek South Coast Conduit Crossing and Fish Passage Improvement Project Mitigation Monitoring and Reporting Plan

Mitigation Measure	*Implementation Procedure or Action*	*Organization Responsible for Implementation*	*Reporting/ Notification Requirement*	*Compliance Schedule*	*Verification of Compliance*
	Air Quality				
AQ-1	**Construction Equipment Combustive Emissions Control.** The following are recommended, where feasible, during project grading and construction to reduce combustive emissions from construction equipment: a. Heavy-duty diesel-powered construction equipment manufactured after 1996 (with federally mandated "clean" diesel engines) shall be utilized wherever feasible. b. The engine size of construction equipment shall be the minimum practical size. c. The number of construction equipment operating simultaneously shall be minimized through efficient management practices to ensure that the smallest practical number is operating at any one time. d. Construction equipment shall be maintained in tune per the manufacturer's specifications. e. Construction equipment operating onsite shall be equipped with two to four degree engine timing retard or pre-combustion chamber engines. f. Catalytic converters shall be installed on gasoline-powered equipment, if feasible. g. Diesel catalytic converters, diesel oxidation catalysts and diesel particulate filters as certified and/or verified by USEPA or California shall be installed, if available. h. Diesel powered equipment shall be replaced by electric equipment whenever feasible. i. Idling of heavy-duty diesel trucks during loading and unloading shall be limited to five minutes; auxiliary power units shall be used whenever possible.	Construction Contractor	Specifications shall be included in the final construction plans	During project grading and construction	Responsible Party: COMB
	Biological Resources				
BIO-1	**Preconstruction Surveys.** As close to the beginning of construction as possible, but not more than 14 days prior to construction, a qualified biologist shall conduct a final pre-activity survey of the construction zone to ensure that no special status wildlife species have recently occupied the site. Before construction activities begin in the creek channel, all fish and amphibians in the work area shall be relocated to suitable habitat in the creek (upstream and/or downstream) by a qualified biologist. This activity shall be in conformance with all conditions in project permits and biological opinions. If any California red-legged frogs are found, the work area shall be checked each day prior to construction to verify that none have entered the area overnight.	COMB	Specifications shall be included in the final construction plans	Within 14 days prior to construction and during construction	Responsible Party: COMB

Mission Creek South Coast Conduit Crossing and Fish Passage Improvement Project Mitigation Monitoring and Reporting Plan (cont.)

Mitigation Measure	*Implementation Procedure or Action*	*Organization Responsible for Implementation*	*Reporting/ Notification Requirement*	*Compliance Schedule*	*Verification of Compliance*
	Biological Resources (cont.)				
BIO-2	**Riparian Trees.** Native trees and shrubs shall be protected to the maximum extent feasible to retain shade and bank slope protection and minimize impact to wildlife habitat. Native trees (excluding willows), 6 inches (15 cm) or greater in trunk diameter shall be replaced at a ratio of 10 for each tree removed, and willows 3 inches (7.5 cm) or greater in diameter shall be replaced at a ratio of 5 per tree removed, or as specified in project permit conditions. The two small coast live oaks to be removed shall be replaced at a ratio of three for each tree removed. The dripline of the native trees around the staging area shall be clearly marked, and no activities will occur within the dripline.	Construction Contractor	Specifications shall be included in the final construction plans	During project grading and construction, and after construction for planting	Responsible Party: COMB
BIO-3	**Construction Timing.** In-channel construction activities shall be limited to the fall low-flow period (September 1st – November 1st) to reduce the potential for impacts on nesting birds, aquatic species, and water quality. Work shall be conducted during daylight hours.	Construction Contractor/ COMB	Specifications shall be included in the final construction plans	During project grading and construction	Responsible Party: COMB
BIO-4	**Restoration.** After construction is completed, the stream banks and adjacent areas disturbed by construction activities shall be stabilized and revegetated, as described in the project description, to avoid increased erosion during subsequent storms and runoff. Native plants or seed used in revegetation shall be from local (same watershed or south coast) plant sources. Specific performance criteria shall be developed for all revegetation.	Construction Contractor/ COMB	Specifications shall be included in the final construction plans	After construction	Responsible Party: COMB
BIO-5	**Environmental Training.** A construction worker education program shall be implemented that includes a description of all sensitive environmental resources, including special status species, nesting birds, their identification, avoidance measures that are part of the project, protocol to be followed if any of these species are found in the work area, and federal and state laws that protect the species.	COMB/ Construction Contractor	Specifications shall be included in the final construction plans	During project grading and construction	Responsible Party: COMB
BIO-6	**Permits.** COMB shall secure appropriate permits from the USACE, CDFG, and RWQCB. COMB will comply with any additional measures imposed as permit conditions beyond those in this document. A Biological Opinion from NMFS under section 7 of the ESA will be required.	COMB	Specifications shall be included in the final construction plans	Prior to construction	Responsible Party: COMB

Mission Creek South Coast Conduit Crossing and Fish Passage Improvement Project Mitigation Monitoring and Reporting Plan (cont.)

Mitigation Measure	*Implementation Procedure or Action*	*Organization Responsible for Implementation*	*Reporting/ Notification Requirement*	*Compliance Schedule*	*Verification of Compliance*
	Cultural Resources				
CR-1	**Archaeological Monitoring.** An archeological monitor shall be present during excavation construction activities outside the active stream channel. If any earth-moving activities uncover artifacts, exotic rock, or unusual amounts of bone or shell, work shall be halted in the immediate area of the find and shall not be resumed until Reclamation has been notified and the appropriate Section 106 consultation, if any, can be initiated by Reclamation.	COMB	Specifications shall be included in the final construction plans	During project grading and construction	Responsible Party: COMB
CR-2	**Discovery of Human Remains.** If during construction, bone is uncovered that may be human; the Native American Heritage Commission in Sacramento and the Santa Barbara County Coroner shall be notified. Should human remains be found, the Coroner's office shall be immediately contacted and all work halted until final disposition by the Coroner. Should the remains be determined to be of Native American descent, the Native American Heritage Commission shall be consulted to determine the appropriate disposition of such remains. If prehistoric or other Native American remains are encountered, a Native American representative shall be consulted, and the archaeologist and Native American representative shall monitor all further subsurface disturbances in the area of the find.	COMB	Specifications shall be included in the final construction plans	During project grading and construction	Responsible Party: COMB

Mission Creek South Coast Conduit Crossing and Fish Passage Improvement Project Mitigation Monitoring and Reporting Plan (cont.)

Mitigation Measure	*Implementation Procedure or Action*	*Organization Responsible for Implementation*	*Reporting/ Notification Requirement*	*Compliance Schedule*	*Verification of Compliance*
	Hazards				
HAZ-1	**Contaminant Control.** Detailed plans for prevention and containment of fuel (and/or other petroleum product) spills and construction equipment spills shall be included in the Stormwater Pollution Prevention Plan (SWPPP). The preparation of a SWPPP shall be a line item in the construction contract. Construction plans shall specify all spill control measures that will be used, including (where applicable): • Properly maintain all construction vehicles and equipment that enter the construction and grading areas, to prevent leaks of fuel, oil, and other vehicle fluids. Vehicles working in the creek bed shall be inspected daily for leaks and immediately repaired if any are found. • No construction equipment shall be left overnight in the creek channel. • Where feasible, all refueling and/or maintenance of heavy equipment shall occur at a minimum of 100 feet (30 m) from the top of bank of the creek channel. If the 100-foot (30-m) distance is not feasible, fueling shall be done within a bermed area, with an impervious surface to collect spilled fluids. • Prepare a spill prevention/spill response plan for the project site that includes training, equipment, and procedures to address spills from equipment, stored fluids, and other materials. • Place all stored fuel, lubricants, paints, and other construction liquids in secured and covered containers within a bermed area. • Conduct any mixing and storage of concrete and mortar in contained areas. • Ensure that all equipment washing and major maintenance is prohibited at the project site, except for wash-down of vehicles to remove dirt, which must only occur in a bermed area. • Washout of concrete trucks shall be in a designated area that cannot come in contact with or runoff into surface or groundwater. • Remove all refuse and excess material from the site as soon as possible.	Construction Contractor	Specifications shall be included in the final construction plans	Prior to and During project grading and construction	Responsible Party: COMB
	Noise				
N-1	**Construction Notice.** At least 20 days prior to commencement of construction, the contractor shall provide written notice to all property owners and residents within 450 feet (135 m) of the project area. The notice shall contain a description of the proposed project, a construction schedule including days and hours of construction, the name and phone number of a contact person who can provide additional information or address problems that may arise during construction.	Construction Contractor	Specifications shall be included on the construction plans	Prior to construction	Responsible Party: COMB

Mission Creek South Coast Conduit Crossing and Fish Passage Improvement Project Mitigation Monitoring and Reporting Plan (cont.)

Mitigation Measure	*Implementation Procedure or Action*	*Organization Responsible for Implementation*	*Reporting/ Notification Requirement*	*Compliance Schedule*	*Verification of Compliance*
	Noise (cont.)				
N-2	**Construction Hours.** Noise-generating construction activities (which may include preparation for construction work) shall be permitted Monday through Saturday between the hours of 7:00 a.m. and 5:00 p.m., excluding holidays observed by the City of Santa Barbara as legal holidays. Construction activities outside the above stated working hours shall be permitted for installation of the line valve (approximately one week duration) and the bypass line across the Tennis Club's driveway (less than one day duration). Nighttime noise would be limited to a maximum of six days.	Construction Contractor	Specifications shall be included on the construction plans	During construction	Responsible Party: COMB
N-3	**Construction Equipment Sound Control.** All construction equipment, including trucks, shall be professionally maintained and fitted with standard manufacturers' muffler and silencing devices.	Construction Contractor	Specifications shall be included on the construction plans	During construction	Responsible Party: COMB
N-4	**Sound Barriers.** As determined necessary by COMB (based on complaints from neighbors), the project shall employ sound control devices and techniques such as noise shields and blankets during the construction period to reduce the level of noise to surrounding residents.	COMB/ Construction Contractor	Specifications shall be included on the construction plans	During construction	Responsible Party: COMB
	Recreation				
R-1	**Coordination.** The contractor will coordinate with the tennis club to schedule the pipeline replacement work in the vicinity of the entrance to occur on a day that has the least level of impact on the club or the patrons.	COMB/ Construction Contractor	Specifications shall be included on the construction plans	Prior to and during construction	Responsible Party: COMB
	Transportation/Circulation				
T-1	**Traffic Safety.** The construction contractor shall prepare a traffic safety plan to be approved by COMB prior to construction. At a minimum, the plan shall address traffic control during ingress from and egress to Highway 192 of project equipment and vehicles (including materials deliveries). The plan will include necessary signage and traffic control measures. All traffic control shall be coordinated with Caltrans.	Construction Contractor/ COMB	Specifications shall be included on the construction plans	Prior to and during construction	Responsible Party: COMB

Mission Creek South Coast Conduit Crossing and Fish Passage Improvement Project Mitigation Monitoring and Reporting Plan (cont.)

Mitigation Measure	*Implementation Procedure or Action*	*Organization Responsible for Implementation*	*Reporting/ Notification Requirement*	*Compliance Schedule*	*Verification of Compliance*
	Water Environment				
WQ-1	**Erosion and Sediment Control.** The SWPPP, to be prepared under the provisions of a Construction General Storm Water Permit, shall specifically include measures to prevent erosion and sediment runoff from the construction site that could cause sedimentation in Mission Creek. These measures shall include, at a minimum, physical devices to prevent sediment discharges (e.g., silt fencing, straw bales), as well as routine monitoring of these devices and revegetation of disturbed soils that would remain exposed after construction. Best Management Practices (BMPs) shall be developed and implemented based on the following guidance manuals: Storm Water Best Management Practice Handbook: Construction (Stormwater Quality Association 2003) and Caltrans Storm Water Quality Handbooks – Construction Site Best Management Practices (BMPs) (Caltrans 2003). Types of BMPs that would be implemented as appropriate to site conditions include: **Stockpile Management BMPs** • Include silt fencing, straw wattles, or straw bales around the base of all stockpiles to intercept sediment and inhibit the flow of sediment-laden runoff from the stockpiles. • Use soil binders or other cover on stockpiles to reduce runoff of sediments. **Grading and Filling BMPs** • Place silt fences, straw wattles, or straw bales around areas to be graded, especially cut and fill slopes, to intercept any loose material that could erode and enter the creek during construction. Use soil binders, temporary mulches, or erosion control blankets or hydroseeding for temporarily bare slopes that would be exposed to wind and water erosion, prior to beginning work and immediately after work. • Revegetate disturbed soils that would remain after construction. • Stabilize construction entrances to the project site with gravel, to help prevent sediment tracking from the construction area to paved roads. **Diversion/Dewatering BMPs** • Prior to construction-related discharges, energy dissipation measures shall be installed at dewatering discharge points into Mission Creek to prevent erosion. • Sedimentation basins (may be straw bales lined with filter fabric or a Baker tank) shall be used for diversion and dewatering discharge points to prevent excess downstream sedimentation. These basins shall be constructed prior to dewatering and regularly maintained during construction to remain in good working order. • Install sediment controls (either a sediment trap or sediment basin) to collect water from any dewatering operations. Filter or settle out sediment from the sediment trap or sediment basin using a sump pit and perforated or silt standpipe with holes and wrapped in filter material.	Construction Contractor/ COMB	Specifications shall be included on the construction plans	Prior to and during construction	Responsible Party: COMB